TEBECHOP 3000 SE

High efficiency modular rectifier system
for industrial environments.

BENNING
World Class Power Solutions

Essential characteristics of the TEBECHOP 3000 SE rectifier system:

- Module MTBF > 350,000 hours
- Designed for industrial environments
- Cost savings due to high efficiency: less heat losses, less cooling demand
- DC/DC functionality included
- High short circuit current capability
- Low volume and weight
- Reliable, modular, hot-plug technology
- Scalable output power up to 300kW
- Low output ripple
- Excellent dynamic performance
- Wide input voltage window
- Wide operating temperature range
- Active power factor correction
- Flexible operation (with or without battery)
- System monitoring with MCU 3000
- Remote monitoring via modem, HTML or SNMP, Modbus or Profibus, IEC61850, ….

Energy Efficiency
Natural Resources
CO_2

Fig. 1: 19" rectifier system TEBECHOP 3000 SE
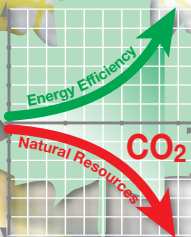
TEBECHOP 3000 SE rectifier systems

BENNING, the leading global power supply manufacturer, is proud to announce the new TEBECHOP 3000 SE rectifier range which provides a robust, modular rectifier system that is specifically designed for use in industrial environments. The efficient conversion technology in combination with the wide operational parameters ideally suits the conditions found in industrial environments such as the petrochemical industry, energy distribution, automation technology and highways where environmental management often is an issue.

The TEBECHOP 3000 SE rectifier offers reduced operating costs due to its very low heat dissipation and high operating efficiency (even under partial load conditions) module design.

TEBECHOP 3000 SE's "plug and play" technology helps to reduce service costs as first level maintenance can be carried out by site personnel, which is also an important consideration for restricted access sites or for sites in extremely remote locations. System "rightsizing" and "pay as you grow" scalability (of up to 100 modules) will future proof the initial investment whilst the ability to operate in a parallel redundant (n+r) configuration will maximise system availability.
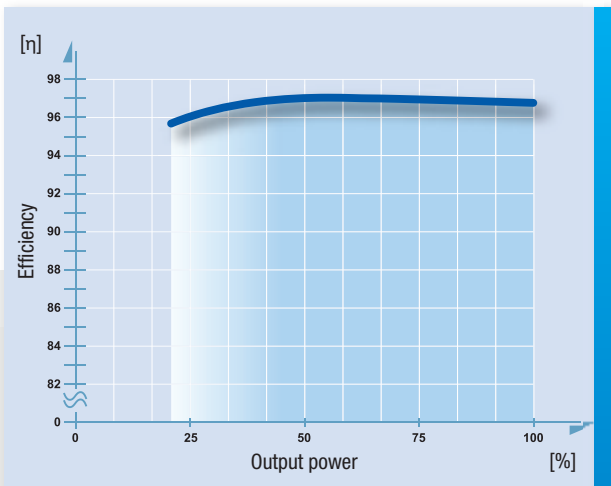
Fig. 2: TEBECHOP 3000 SE, efficiency vs. output power

High energy efficiency even at partial loads

The new TEBECHOP 3000 SE rectifier systems not only uses state of the art conversion technology and modern communication methods, they also contribute to climate protection due to their excellent energy efficiency. The efficiency of the TEBECHOP 3000 SE exceeds 96% with only slight reductions in the partial load range.

This leads to a lower power dissipation, reduces the cooling requirements and reduces the TCO (Total Cost of Ownership). TEBECHOP 3000 SE gives a class leading return on investment.
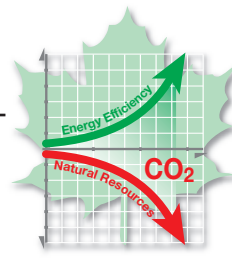
Modularity for demanding industrial applications

For decades BENNING has supplied large numbers of modular rectifiers and inverters into various industrial applications. These modular systems have proved their worth due to their high availability and excellent serviceability. Benning has used all of its extensive experience and expertise in designing systems for use in the challenging conditions found in industrial applications to make the TEBECHOP 3000 SE module the most robust modular rectifier available in the market place.


Fig. 3: Modular rectifier system with 20 TEBECHOP 3000 SE rectifiers

Technical data: TEBECHOP 3000 SE module

Output power (module)	[W]	3000				
Qty of modules (per system)		up to 100				
Input voltage range	[V]	85 – 320				
Input current (@ 230 V)	[A]	14				
Input frequency	[Hz]	0 – 66				
Power factor		> 0.99				
Characteristic		IPU				
	[V]	24	48	60	110	220
Output current	[A]	83	63	50	28	14
Output voltage range	[V]	19 – 34	36 – 66	49 – 78	88 – 154	170 – 297
Float voltage (factory default)	[V]	26.8	53.5	66.9	120.4	240.8
Boost voltage (factory default)	[V]	28.8	57.6	72	129.6	259.2
Short circuit current capability		2 x I_{nom} for 4 seconds				
Voltage tolerance						
static	[%]	± 0.5 typical				
dynamic	[%]	± 5 (load Δ 10 - 90 - 10%)				
Response time	[ms]	± 2 (load Δ 10 - 90 - 10%)				
Efficiency	[%]	Up to 97				
Ripple	[%]	< 1				
EMC		EN 55022, class b				
Protection class		1 in acc. VDE 0804 and IEC 60950				
Protection		IP 20				
Ambient temperature	[°C]	-45 – 75				
Installation height	[m]	up to 5000 ASL				
Humidity class		F in acc. DIN 40040				
Cooling		temp. controlled redundant fans				
Indicators (LED)						
Operation		green				
Battery Operation		blinking green				
Failure		red				
Dimensions (module)						
Height (front panel)	[mm]	132.5 (3 HU)				
Width (front panel)	[mm]	85.6 (1/5 19-inch)				
Depth	[mm]	300				
Weight (module)	[kg]	2.9				

Technical data subject to change witout further notice.
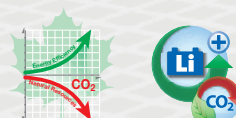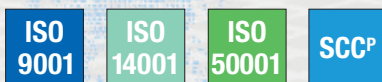
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